

IMPACT OF TRAINING; CARDIO-PULMONARY FITNESS OF SRI LANKAN NATIONAL LEVEL ATHLETES ENGAGED IN RUNNING EVENTS

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Most Sri Lankan national level athletes do regular training at high intensity for about five to six days per week. Even with high level of training their performance at local and international competitions is poor. Cardio pulmonary fitness assessment (CPET) of athletes is important to improve and monitor their sports performance and health status. The study aimed to determine the cardiopulmonary fitness parameters of athletes engaged in running events and the effect of training on cardiopulmonary fitness. National running athletes (n = 62; male= 40, female= 22) were studied. Cardio-Pulmonary fitness parameters maximum O₂ uptake (VO_{2peak}), Exercise duration (VO_{2max} time) anaerobic threshold (VO_{2AT}), exercise capacity(METs), peak heart rate (HR_{peak}), Heart rate at VO_{2AT} (HR_{at}), Heart rate after 3 min of exercise (HR_{3min}), Peripheral O₂ saturation(SpO_2), maximum energy expenditure(EE) and maximal load (W) were assessed by a Cardiopulmonary exercise testing machine with a Cycle ergometer (COSMED Inc.). The cardiopulmonary fitness parameters was compared with an age, height, weight and gender matched controls not engaged in regular sports training (n= 60; male= 30, Female=30). Data were analyzed using SPSS-16 statistical package. In male athletes VO_{2max} , VO_{2max} time, MET, W and in females athletes VO_{2max} , HR_{peak} , HR_{at} , HR_{3min} , MET, EE were significantly improved when compared to controls ($p < 0.05$). The correlation between cardiopulmonary functions of male athletes was not significant with training duration. Female athletes had a positive correlation of SpO_2 and a negative correlation with HR_{peak} , HR_{at} with training duration. The association between improvement in VO_{2max} along with other parameters enhances performance. In

conclusion the training schedules of the national level male and female running athletes should be re- evaluated and fine tuned to achieve more precise cardiopulmonary fitness and performance outcomes.

Key words: *national athletes. cardiopulmonary exercise fitness, training duration*